

A PRIMER
OF THE ART OF
MASSAGE
(FOR LEARNERS)

DR. STRETCH DOWSE

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A PRIMER OF THE
ART OF MASSAGE.

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THE ART OF
MESSAGE
(FOR LEARNERS).

BY
DR. STRETCH DOWSE.

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PREFACE.

THE following pages have been put together especially for the use of those who are anxious to make themselves familiar with the general principles connected with the various modes of applying mechanical energy to the human body by means of the human hands; in fact, the author's object in the publication of this handbook is to so arrange the chief points of interest and importance in connection with the subject of Massage in such a concise form that his pupils may easily realize and comprehend and utilize their signification. The author finds this to be necessary, and he hopes that the acquisition of the elementary knowledge

here imparted will stimulate them to the further acquirement of the more extended information which will be found in his published Lectures. A good masseur must understand the primary laws of Physiology and of Physics.

THOMAS STRETCH DOWSE.

14, WELBECK STREET,

LONDON, *May*, 1892.

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ON MASSAGE:

A Handbook for Learners.

THE term **Massage** means literally massing together, or bringing together, and it must be examined carefully from its most comprehensive point of view. In my class I speak of massage manipulations as “The application of sentient living matter to sentient living matter in divers ways, with varying degrees of energy, according to the resistances in the living tissues which have to be encountered and overcome.” This is the problem which must be solved, the text upon which the sermon must be preached. The question of **energy versus resistance** is at the bottom of all massage

manipulations, and this I have set forth very fully in my "*Lectures on Massage and Electricity in the Treatment of Disease*" (J. Wright & Co., Bristol), but in the following pages I must deal with the whole subject from the elementary and mechanical rather than from the biological and physiological aspect.

* * * * *

ENERGY.—You scarcely need to be told that manipulations made upon the human body are merely evidences of the transference of so much **mechanical energy** from yourself to your patient. If you grasp your friend's hand in kindly greeting you have also evidence of the transference of mechanical energy, and the **effects** or **impressions** created, both upon the tissues and the mind, will be in direct ratio with the degree of the impress, the energy evolved, and the resistances overcome.

* * * * *

Energy signifies capacity for **work**, and

is the essential accompaniment of all forms of **activity**. Therefore energy is essential to life, and life cannot exist without energy.

* * * * *

Energy travels in lines of least resistance, the less resistant being the less vital. We know nothing of **vital energy**, but we can speak of the energies associated with life, as much as we know of them in the physical world. We cannot even get hold of **nerve energy**; we have no means at our command by which we can even measure nerve energy in the same way that we can **electrical energy**; and for this reason you will find, and you must rest content with the knowledge, that in manipulating you are merely dealing out mechanical energy, with the result, or at least, let us hope with the result, that you are translating **potential energy** into **active energy**, and so leading on to that standard of activity and **energy trans-**

formation which is essential to living matter (Metabolism).

* * * * *

You will never forget that your manipulations are directed to this end, that you are impressing the most sensitive of all sensitive material when you are acting upon the solids and fluids of the human body; that you are engendering molecular physical changes, stimulating activity, and converting interchanges between all the known energies, and promoting that omniscient and omnipotent advancement from the inorganic to the organic, of which we are absolutely ignorant.

* * * * *

Therefore I claim for manual mechanical energy (as applied to the living tissues) a power second to none in bringing about the accomplishment of some of the highest and most complex transmutations, translations, and transformations of energy,

which are essential to the highest developments of human existence.

* * * * *

RESISTANCES.—To speak of energy without considering resistance, would be like speaking of gravitation and omitting to note the pressure of the atmosphere. We have seen that the special property of energy is to overcome resistance, that resistances create and bring energy into a state of activity; that there is, in fact, a constant antagonism existing between energy and resistance, and that without this state of warfare, activities would cease. In the highest productions of physical life this warfare is most active, most complex, and most highly organized. In the lowest productions of physical life we find the opposite state to exist. Energy and resistance can be best studied by currents of electrical energy.

* * * * *

You will do well to study the resistances

of the human body, not to electrical energy, which is at all times variable and uncertain, but to mechanical energy, through your own strength. In other words, you will test the strength of your patient's muscles by the amount of your own energy which is required to resist volition on his part, muscular power being under most circumstances a fair average test of a man's strength. Energy, resistance, and endurance, the mere grasp of the hand, purposely exercised, will illustrate my meaning—but I shall refer to this again.

* * * * *

I must now call your attention to some points of interest and importance relative to the masseuse, nature of operation, time of operating, length of operation, etc. With reference to the individuality of the masseur and the masseuse, I must say that some individuals are utterly unfitted for the office by nature, by education, by

general development, and by disposition. I have no wish, in fact I will not try, to lay down a hard and fast line concerning physical development, to the entire exclusion of a large number of persons who fail to come up to the exact standard, for it must be remembered that our patients to be massaged are not all of the same type, either mentally, morally, or physically. Young children, for instance, do not require the same standard of masseuse that would be required for a fully developed adult.

The standard of individuality for the masseur or masseuse may be thus defined :

- 1.—Good physique and good health absolutely essential.
- 2.—Cleanliness in every particular is of the greatest importance.
- 3.—An intelligent interest in the patient's welfare.
- 4.—Perfect devotion and zeal in carrying out fully and carefully the duties of

the work to the minutest detail, so as to ensure the confidence of the patient.

5.—Good temper and forbearance are necessary.

6.—Absence of fuss and undue haste.

7.—Intelligence and even refinement are advantageous.

8.—A happy, cheerful disposition, with vivacity and dexterity, readiness and ability, not forgetting a pleasant contented face, complete the standard of individuality.

* * * * *

Let me now speak to you of the human hand. You cannot manipulate unless you are clever with your hands. Of course, massage is made up of manipulations, therefore you certainly should know something about the hand. I assure you, if you do not already know it, that the hand is a study of the highest physiological, anatomical, and pathological significance.

The perfect hand for massage work should be soft, smooth, dry, and fleshy,

and of good normal, healthy temperature.

The square hand, with powerful thumb adductors, is usually found most useful ; but the following conditions in the nature of the hand are of unquestionable value, namely : good muscular power, suppleness, pliability, flexibility, firmness of grip, and compliancy to yield readily, impressibility, smoothness, fineness, warmth, even delicacy. A damp, cold, clammy hand is totally unfit for massage manipulations.

You will find that every part of the hand must be made available, and there is no position which the hands and fingers can assume which cannot be adapted to some form of massage.

Whilst considering the masseur, I am anxious to draw your attention to several points of importance. The first is, that you keep yourselves in good health. Take three good meals a day, but never take stimulants until your work is over ; then, provided you are in active work, you will

find a bottle of stout and a good night's rest restore your energy, and equip you for the following day's work. Avoid working on Sundays, if you possibly can ; and on this day get fresh air and natural exercise. Now, please to clearly understand me upon this point. If you are in active work, you will have to conserve your energy in every way possible. You cannot, for instance, walk a mile, even to your patient ; for should you get to your work flushed, hot and wearied, you are doing yourself and your patient an injustice.

And now we will consider our patient from several points of view. The room should be of comfortable temperature, say from 62° to 65° F. The couch or bed upon which the patient is placed should not be too soft or yielding. As little as possible of the body of the patient should be exposed at one time. In general massage one hour should lapse after a meal before the process is commenced, and the process should extend from thirty

to forty minutes, twice a day, between 11 and 12 in the morning, and 5 and 6 in the evening; or between 12 and 1 midday, and 8 and 9 at night.

During the *séance*, I strongly advise you not to talk to your patient or allow your patient to talk to you. This, which is a very common practice, mars the good effects of the operation. No operator can manipulate well and thoroughly, and be trying at the same time to amuse his patient; of this I am quite certain. Not only does the masseur or masseuse become exhausted, but the patient, instead of feeling refreshed by the manipulations, becomes exhausted also. I know it is a difficult matter to decline answering the ridiculous questions which patients will sometimes put to you: relative to how long you have been at the work, whether you have any very interesting cases on hand, how many patients you have cured, and so on. All you have to do is to tell your patient to be quiet until the operation

is over. Therefore, if you please, always enjoin silence during the time that you are manipulating. **Do not talk to your patient, and do not allow your patient to talk to you.**

After the operation is over, it is imperative that the patient should be made thoroughly warm. I want you particularly to remember this question of warmth after every form of massage, whether local or general. "Always endeavour to maintain the heat which your energy has generated and created." In some instances this can be best done by the rubbing in of oil and then wrapping the part in flannel or cotton wool; or, if it be the whole body, blankets may be used.

* * * * *

You will do well to remember one or two points in reference to the use of **adjuvants** (oils and embrocations).

1st.—For neuralgias of the head and neuralgias in general, apply equal parts of chloroform and castor oil, and for painful

joints you can use the same application.

2nd.—For the abdomen, liquid vaseline is to be preferred, and it should be used freely from the commencement (always).

3rd.—In Weir-Mitchell cases every part of the body should be anointed with oil after each manipulation.

4th.—You will not forget that in all paretic, paralytic, and other muscular affections, **you do not use any kind of lubricant whatever at the time of manipulating**, but after the operation is over it is frequently advantageous to grease the parts to prevent radiation of heat, and secure warmth.

* * * * *

Before classifying the various forms of manipulations, I must draw your attention to the human body. From the **systemic** point of view, it is the most perfect organization in the great universe of organized matter, the most complex machine for the generation and diffusion of the highest and noblest of human faculties, the “human

intellect.” **As each kind of manipulation applies itself to each system**, it is necessary that I should mention these systems to you, and I will do so in the order of their importance.

Nervous System } consisting of { Nerve centres
Nerves

Nerve } consisting of { Roots
Trunk
Periphery

Nerves } consisting of { Special
Sensory
Motor

Circulatory System } consist- ing of { Arteries
Veins
Lymphatics } Capil- laries

Muscular System.
(Skeletal Voluntary) } consisting of { Flexors
Extensors
Adductors
Abductors
Pronators
Supinators
Rotators

Joints
(Movable System) } consisting of { Pivot
Ball and Socket
and Hinge Joints

These are the systems which concern us chiefly from the massage point of view. The other systems known as **Respiratory, Digestive, Glandular**, etc., are influenced secondarily through the general and increased metabolism which is primarily effected by our manipulations upon the Nervous, Circulatory and Muscular systems, and I must refer you to my published lectures for detailed information upon these subjects. After considerable experience in teaching, and in order to give my class a fair general knowledge of the action of their manipulations upon these systems, I follow somewhat the arrangement here alluded to.

* * * * *

Do not forget what I have told you, that every system, and every **tissue** of that system, has its own inherent **capacity** and **tonicity** for **resistance**; and I again must ask you to remember that **special energies** are required to meet **special**

resistances, and these we will now consider from our own special manipulative standpoint.

* * * * *

Manipulations have been divided by masseurs into four classes, namely : **Effleurage**, **Petrissage**, **Tapotement**, and **Friction**.

EFFLEURAGE.

Manipulations coming under this designation are of a light, stroking character, and are specially applicable to the head. **The tissues**, which are acted upon by these movements are **epidermis**, and the **peripheral ends of nerves**. **The therapeutic effects** of these movements are calmative, soothing, hypnotic, and sleep giving. **The physiological effects** are

such as lead to vascular contraction and a general slowing of the blood through the brain, and to a depression more or less profound on the cerebral cortex, and to a perversion in the wakeful activity of the nerve protoplasm.

* * * * *

In order to give you a correct idea of effleurage, I must tell you that the very perfection of an effleurage movement consists in its **lightness**, and directly pressure is brought to bear, the movement is not an effleurage but a **pressure** or **petrissage** movement. Whilst speaking of effleurage, let me draw your attention to one or two points of great interest in reference to **touch**. You will possibly hear about the touch of one masseuse being more delicate and superior to that of another. This cannot be disputed ; it is dependent upon many causes, and amongst others we find muscular sense, but the tissues more immediately concerned in the sense of touch

are the **epidermis** and the **twigs** of the nerves.

* * * * *

Effleurage is a surface manipulation, and the **epidermis** of your fingers (not of your hand) is brought into very light contact with the **epidermis** of your patient. The **epidermis** is one of those structures of which you must know something : it is commonly called "Scurf skin." It is usually more delicate upon the **flexor** than the **extensor** surfaces of the limbs. Epidermal appendages, such, for instance, as the hair and the nails, are like the **epidermis** itself, destitute of **nerves** and **blood-vessels**. It is invariably thicker upon the soles of the feet and the palms of the hands than elsewhere. One great and undoubted property of the **epidermis** is **non-sensibility** when compared with the underlying skin. This comparative **insensitiveness** is due to the **absence of nerves** in its outermost layers, and it is owing to this arrangement of partial

insulation that the epidermis is more resistant and is a greater **non-conductor**, than any other tissue in the body. **The finer the epidermis the more delicate is the sense of touch.**

* * * * *

We say, then, that the sense of touch is a variable quantity, dependent upon the integrity of the brain cortex (limbic lobe), of the nervous cords or conductors of stimuli, of the peripheral or sensitive terminals of the nerves, and upon the **thickness, dryness, or moist** condition of the epidermis. The effects of all manipulations are dependent upon the impressions made upon the tissues. We do not admit that an effleurage movement carries with it **pressure**, but we do assert that it creates an impress ; therefore, if an effleurage manipulation is a pressure movement at all, it must be of the **lightest** possible character. **Touch, then, is the right perception and conception of an impression, varying according to the nature**

and the degree of energy employed to effect the impress.

* * * * *

Now let me draw your attention to the manipulations for the head, neck, and face.



Fig 1 illustrates the ordinary method of masséeing the head, effleurage. One hand of the operator is carried over the mastoid portion of the temporal and upwards to the vertex of the head, whilst the other hand is carried over the opposite frontal eminence. Both hands are so directed that they meet each other at the top of the head.

Seat your patient upon a stool and stand

behind it, and work your hands upon opposite sides of the head (*Fig. 1*).

* * * *

First: Place your right hand firmly upon the occiput and mastoid process of the right temporal bone, whilst your left hand is placed upon the temporal bone and external angular process of the orbit. Both hands now traverse the head to meet each other upon the vertex; the right ascends upwards over the parietal bone to meet the left hand which is carried over the superciliary ridge and left frontal eminence of the frontal bone. These movements must be made firmly, and if well done the pressure of the one equalizes the pressure of the other, and so the head is kept vertical upon its balance. You now perform precisely the same movements, but they are reversed; the left hand is now working in the same way that the right hand was before.

* * * *

Secondly : This movement requires a little practice. Place both your hands at the back of the head in the occipito-mastoid regions respectively, carry them both upwards and forwards on each side over the temporo-parietal regions, then continue onwards and forwards, each hand over the supra-orbital ridges and frontal eminences ; then cross and work from before backwards over the vertex, now recross the hands and carry the movements right and left hand behind the right and left ramus of the jaw downwards over the sterno-mastoid muscles into the root of the neck. Do not remove the hands, but work them up the neck, the heel of the hand being followed by the fingers ; work the fingers well into the sub-occipital spaces and posterior triangles of the neck ; then commence and repeat the movements as before. Make these movements more or less firmly from first to last.

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Thirdly : Should you wish your manip-

ulations to produce a calming and soothing influence, they must be made lightly and purposively, vertically over the forehead and behind the ears.

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Fourthly : Should you wish your manipulations to be of a stimulating character, such as we commonly employ for the **neck**, they must partake both of impress (effleurage) and pressure (petrissage) and they should be performed with **considerable rapidity** (vibration).

PETRISSAGE.

This term is applied to **pressure** manipulations, or pinching, kneading, and working into the deep structures, and massing them together. **The movements must be molar.** A petrissage movement

in its simplest form is best evidenced by gliding the upper part of the index finger over the thumb in a rotary manner, with pressure. You cannot expect to grasp the truths connected with any manipulations from their written description, simply because it is next to impossible to describe them. If you take a piece of your own skin and roll it between your finger and thumb and graduate the pressure to the verge of producing pain, you will have performed and experienced the effect of petrissage. In all petrissage movements, no matter whether they are performed by the finger and thumb, or by the fingers and thumb, or by the entire hand, one part is usually a fixed point ; for instance, in working rapidly, you will make the thumb the fixed point, and draw your fingers to your thumb ; on the other hand, your fingers are fixed points, and you draw your thumb towards them. In working with the entire hand, the wrist part of the hand is the fixed

point, towards which the palm of the hand and the phalanges exert their pressure.

In my class I am always anxious to make my pupils bear in mind that there are four primary and principal forms of petrissage manipulations: the first is of the thumb and end of index finger, or of the thumb and ends of all the fingers; the second is of the entire thumb and the whole of the fingers, and the forepart of the palm of the hand; the third is of the entire hand, using particularly the heel of the hand and ball of the thumb; the fourth is an exceedingly useful form of manipulation, which I call **vibratory petrissage**; it is best effected by the combined action of the tips of the fingers and the thumb; this movement must be seen to be understood. It is certainly very effective, and admits of considerable pressure and vibratory motion.

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The tissues acted upon by petrissage manipulations are, particularly, skin,

fat, muscle, areolar tissue, the trunks and extremities of nerves, the trunks and extremities of arteries and veins, the trunks and extremities of lymphatics.

* * * * *

The physiological effects of petrissage are, respiration of tissue, increased circulation, rapid absorption, more perfect elimination and complete assimilation, an augmentation of temperature and heightened colour, or in ordinary phraseology, increased metabolism. At one time writers upon Massage were very particular that their manipulations should be made to travel from periphery to centre in the direction of the venous blood-flow, so as to squeeze the blood out of the larger vessels ; but we now pay less attention than formerly to such instructions as these, because we know that the chief results of our manipulations are brought about in the smallest capillary vessels, and in the ultimate elements of the tissues.

* * * * *

Petrissage manipulations are **especially** applicable to the **extremities**. So we will now consider these parts of the body, beginning with the arm. But before commencing to operate you must examine the limb very carefully to ascertain its exact condition, and observe its abnormalities, if there be any. First, you will note **temperature** and **colour**, and see whether the skin is **dry** or **moist**, **harsh** or **soft**; then you will examine the muscles, mark their outline, their firmness, or their flabbiness, and their power of contraction against resistance. Observe the grip of your patient's hands. You will have to make exact and careful notes of these conditions after your examination, so that when the patient has undergone a course of treatment, you can compare the past state with the present, to make yourself sure of the exact amount of improvement which your manipulations have produced.

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Petrissage is essentially the form of massage for muscle, just as I stated that effleurage was essentially the manipulation for the surface of the body and the peripheral ends of nerves. It is somewhat surprising to watch the effects of pressure and vibratory movements upon muscle. They aid the explosive changes which are necessary to muscular contractility, and you must know that the activity of muscular contractility is essential to its nutrition, growth, repair and waste. Before proceeding to narrate the different steps required for the manipulations of the extremities, I should like to call your attention to some few points of importance concerning **muscle** and **fat**.

* * * * *

In my lectures I am very particular to draw the attention of my pupils to the importance of the due exercise of muscles (Ling movements) in gymnastic and other forms of exercise ; all kinds of massage

are comparatively useless without the knowledge of muscular movements and the best means to execute them, both with and also without the interference of the patient.

Let me tell you that all movements in the body are the result of muscular action, excepting ciliary and amœboid movement : That the especial property of muscle is its power to contract when acted upon by certain forms of energy or stimuli, the natural stimulus being sent to it from the nervous centres, the nerve being the rheophore or medium of conduction : That the integrity of voluntary muscular movement is dependent upon the integrity of the nerve cells in the kinæsic area of the cortex of the brain on the opposite side to the muscles which were being stimulated, and to the integrity of the nerves as conducting agents, rather than to the integrity of the muscles themselves : That the nerve cells in the motor area of the hemispheres had a small sensory

equivalent when compared to their large motor equivalent : That the axis cylinder of most nerve fibres is continuous in one direction with the process of a nerve cell, and may be looked upon as a prolonged process of the cell showing its stages of exaltation and depression, and also its functional and nutritional defects : That muscular sense and tactile sensibility were likewise located in the kinæsthetic area : That there were two prime levels for the liberation of energy, the one **volitional**, situated in the grey matter of the cortex, the other **automatic**, and situated in the bulbo-spinal axis : That the centres of the lower level had an existence of their own, but that these centres were subordinate to the centres of the higher level : That muscular tone was dependent upon the vitality of the nervous centre and its connection with the muscles : That the conducting power of the nerve was inversely to the resistance that the stimulus had to overcome in its transit : That pain, spasm,

and cramp in muscles were due to over-excitability on the part of the nerve cell, or to defective resistance on the part of the nerve or muscle producing undue tension and pressure in the muscular fibrillæ: That the generation and transit of a stimulus was equivalent to the work which it had to perform: That the stimulus travelled in a regular and rhythmical manner: That a nerve fibre enters each muscular fibre, and where it enters it forms an eminence, the "motorial end plate": That muscular tissue had an "independent excitability," which was inherent in certain constituents of the sarcous substance, so that a muscle may be made to contract directly by a stimulus acting upon itself, as well as indirectly by an impulse sent to it through its motor nerve: That the degree of contraction of a muscle depended upon the strength of the stimulus, the contractile power of the muscle after a time becoming exhausted, even though the stimulus continued of the

same strength : That the direct as well as indirect stimulation of a muscle is productive of phenomena with which we ought to be acquainted in subjecting a muscle to the galvanic or faradic currents, and to massage.

I cannot in this little handbook enter so fully into the nature and relationship between nerve and muscle as I have done in my published lectures, but there are some few points of interest which cannot be omitted.

* * * * *

We say that the property of muscle is to contract, and that the result of this contraction is movement. You will please observe and note with care this power of **contractility** ; it is strongest in the athlete, and it is weakest in the emaciated and exhausted. It is due to many factors, as we have just noticed, but the battery in the brain, and the conducting nerves and the sarcolemma of the muscle are absolutely essential to contractility. If

the battery in the brain is at fault, the energy or stimulus is deficient. If the nerve is at fault, the energy or stimulus cannot be transmitted. If the sarcous substance of the muscle is defective in quantity or quality, the energy expends itself by dissipation, and not transformation. You must remember these three points of interest and great importance, for the integrity of movement is dependent upon the universal integrity of **Brain, Nerve and Muscle**. Failure of function in one must lead to failure of function in the other, so intimate is their unity and correlation. You will thus see from these observations that by the manipulation of muscle you are not exerting an influence upon muscle alone, because such influence must be extended to nerve, and to the brain itself, and to the circulation.

* * * * *

I have told you that petrissage manipulations engender **pressure**, and that

pressure is the essential outcome of **petrissage**. I should like you to think this over.

Force applied to **living matter** causes, or tends to cause, the motion of masses, or it may be of molecules, of which the mass is composed, assuming the living matter to be made up of **solids, liquids and gases**. It is therefore necessary that we take into account the laws of pressure and its area of distribution, as well as its intensity upon the organism upon which its influence is exerted. We must **distinguish between the amount of pressure and the intensity of pressure**. Quantity and intensity of pressure are analogous to the quantity of heat and the **temperature** of a body.

* * * * *

Pressure applied by our petrissage manipulations is transmitted variably, according to the **resisting** power of the tissues to which it is applied, to its **vitality**, and to its **mass**.

According to the nature of the **pressure** applied, and the **resisting** power of the tissues operated upon, so do we get changes in such tissue of **molecular activity** and **irritability**, or **molecular derangement** and **death**. You must please therefore bear in mind that your petrissage manipulations are intended to bring about molecular irritability and activity only. They should never be exerted so powerfully as to induce derangement and death. Our petrissage manipulations have not only to deal with pressure, but they have also to decrease **tension**, and bring about **absorption**.

* * * *

Absorption cannot take place where there is undue tension.

By gradually applied pressure, **tension** is overcome, and **absorption** follows. We speak of absorption taking place by means of the **lymphatics** and the **veins**, but it covers a much wider area than this in the

life processes of the living body. For instance, **gases** are continuously being generated and absorbed by the **fluids**, and **diffusion** here steps in and tends to equalize pressure ; but all these questions and propositions concerning absorptions and diffusions are settled once and for all if you gain a thorough knowledge of the physical laws of **energy** and **resistance**.

* * * * *

Take a glance with me at these lymphatics, and let us see how they are influenced by our pressure movements, how, in fact, they are made to absorb and bring about the removal of the products of congestion and inflammation, such as exudations, transudations, extravasations, adhesions, and the like of these.

* * * * *

Petrissage, kneading and pressure movements act like a pump to force onward the flow of the venous blood and the lymph, and not only do they effect

this, but the normal capacity of the lymphatic system to absorb is enormously increased by these mechanical processes. Pressure is the all-pervading element then in absorption. Pressure without, in plain words, is the antagonist of pressure within. Active is far more useful than static pressure. Let me instance my meaning in the simplest of ways. Given a case of chronic effusion into a joint, we can (and it is continuously done) apply pressure by carefully strapping the joint; but this is a tardy and oftentimes a very incomplete process. Compare it, however, with active pressure by means of manipulations, and you will see that the result is far more efficient and satisfactory. Remember, then, that the lymphatics are the essential absorbents of the human body.

* * * * *

Now take a glance with me, for it is but a glance, at the **systemic or general circulation**, consisting of **Arteries, Veins**

and **Capillaries**. I have before told you that the modern masseur is indifferent to the trunks of the vessels, and that he confines his attention to the ultimate ramifications of arteries and veins. And again let me tell you that your manipulations are essentially directed to veins, and less so towards arteries. You will see when we commence to manipulate the extremities, that our movements are particularly petrissage, or pressure movements, and that their direction is that of the venous blood-flow, and opposed to that of the arterial blood-flow ; but, and I wish you to remember this (so excuse repetition), they are essentially directed towards the capillary system of vessels.

The reasons why we direct our attention to the more immediate effects of our manipulations upon the capillary circulation are many, but the chief one is that "the resistance to the blood stream is greatest in the capillary area," and if the diameter of the veins leading from the

capillary area be narrowed, the intra-capillary blood pressure is increased, and if the pressure is such as to overcome the normal resisting power of the muscles in the walls of the veins, dilation and varicosity results. Bodily exercise, such as walking, running, etc., accelerates the action of the heart and diminishes blood pressure, whereas our massing manipulations diminish blood pressure, but without increasing the activity of the heart. "In manipulating (say the extremities) the contracting hands of the manipulator are, as it were, two more propelling hearts at the peripheral ends of the circulation, co-operating with the one at the centre, and the analogy will not suffer if we bear in mind that the size of one's heart is about as large as their shut hand, and the number of intermittent squeezes of massage that act most favourably on **vessels, muscles and nerves**, is about seventy-two per minute, which is about the ordinary pulse-rate" (Graham). Let us

not forget that the blood vessels and the lymphatics communicate with what are called the "juice canals," so widely distributed throughout the connective tissue, and that this juice is continuously passing out of the thin walled capillaries into these spaces. These fluids are for the most part **essentially nutritive**, and concerned with what is known by the term **assimilation**. Each tissue with which it comes into contact selects from it that which it requires, whilst the effete materials pass back into the spaces, and from these reach the lymphatics, which ultimately discharge them into the venous blood.

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Fat is one source of the energy of the body by its transformation into **work** and **heat**. There are some fats which are **stable** and **firm**, and fats which are prone to rapid **disintegration** and **absorption**. Increase of fat to be a wholesome con-

dition, should be accompanied by gain in quantity and quality of blood. Weir Mitchell writes of an old nurse who assured him that in her experience "some fats is fast and some is fickle, but cod oil is easily squandered." One thing is quite certain of massage, viz. : that it aids the production of nutritional changes in the tissues in keeping with the constitutional characteristics and tendencies of the formative processes of the individual by heredity ; therefore, fat is very easily produced in some persons, whilst in others its development is attended with considerable difficulty.

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There can be little doubt that by pressure movements considerable masses of fat can be absorbed. Fat gained by massage is almost always accompanied by gain in blood, therefore it is only reasonable to infer that fat so produced is "good fat." Your services will be required, not

only for the production of fat, but also for bringing about its reduction and absorption.

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I think we are now conversant with the tissues of the extremities, viz. : (if we take them from without inwards), epidermis skin fat, muscles, blood-vessels, lymphatics, and nerves. I must now say something to you about joints, because this is a subject of some importance, with which you ought to be familiar.

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Joints.—If you ever should have a stiff joint you will realize how necessary joints are to movements. We have to deal with movable joints only. **All movable joints are constructed to facilitate movement and limit movement.**

Those structures which facilitate movement are the ends of bones bevelled smooth and covered with **cartilage**, a soft, somewhat yielding membrane with smooth surfaces, which permit of an easy,

gliding movement. The joint is enclosed by the **synovial membrane**, which, with the capsule to which it is attached forms a stout sac. This synovial membrane possesses the property of secreting a viscid semi-fluid, colourless material, "**the synovial fluid**," whose function is to moisten and keep the joint lubricated. These structures, with blood-vessels, lymphatics and nerves, are the tissues necessary to the joint. The structures which bind the ends of the bones together are fibrous bands, known as **ligaments**, and these **limit** the movements of the joints. In the practice of massage you will meet with all kinds of joints—painful without swelling, and swollen joints without pain, joints with constant pain, joints with intermittent pain, joints where pressure relieves the pain, and those where pressure produces and intensifies the pain, sometimes associated with heat, sometimes with cold. Remember that pain in a joint is more often relieved by **extension** than by

flexion, therefore, before flexing a **painful** joint grasp its **proximal** ends firmly, draw (if I may so express it) the ends of the joint asunder, and then flex quickly or slowly, according to circumstances.

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To massage a joint or to attempt any undue movement during the acute stage, would be unwise and improper. Rest and extension are the true requirements for an acutely inflamed joint. Before masséeing a joint after acute inflammation, it is necessary to have some skilled surgical opinion. There is undoubtedly a stage after the more acute symptoms have subsided, when absolute rest is positively harmful, for at this time the effused material if left alone, becomes rapidly organized, and a **stiff joint is sure to follow**.

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It is at this period, or I may say, at this juncture, that carefully applied massage and well directed passive movements not

only frustrate organization but bring about absorption and the healthy restoration of tissue. I need scarcely tell you that skill in your manipulations under medical supervision is absolutely necessary, and the most delicate handling and watchfulness are called for ; a slight elevation of the temperature of the joint indicates that extreme caution and care are required, and as long as the increased temperature persists, **the joint should be left alone.** If you please, **take temperature as your guide in all your massage operations,** and remember in all these exercises to use some lubricant. I prefer equal parts of chloroform and castor oil. I advise you not to meddle with joints at night ; always take the morning for your manipulations. **Well directed pressure, evenly, firmly, and gradually applied, must form the basis of your manipulations.**

You will soon learn by experience how **pressure** brings about absorption.

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There is no comparison between the effects of mobile pressure by massage, and that produced by strapping ; the former restores the absorptive power of the lymphatics and veins, and at the same time natural function and tonicity are restored, and more permanently so. The tendency of massage is to cure by the restoration of natural and normal function, and although the change must of necessity be gradual, it is on this account the more sure and complete.

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Every organ of the body is best maintained and supported by the due performance of its function, no matter what that function may be. If its function fails, its special attributes fail in like manner, and of necessity its nutrition becomes impaired.

There are two kinds of joints concerning which I would have you thoroughly acquainted, because without such ac-

quaintance I do not see how you can carry out your work. These are Ball and Socket joints, such as we find at the shoulder and the hip and hinge joints, which are best exemplified at the elbow, wrist and fingers, knee, ankle and toes. The **ball and socket** joint is universal in its movement, and its great feature is **Rotation**. It admits of the following movements :

Ball and Socket Joint	{	Rotation
		Adduction
		Abduction
		Forwards
		Backwards
		Downwards
		Upwards
Hinge Joint	{	Flexion
		Exertion
Pivot Joint	{	Partial Rotation
		Nodding
Radio-Ulnar Joint	{	Pronation
		Supination

* * * * *

The Shoulder Joint is a less perfect

ball and socket joint than the hip ; it is the most **freely** movable joint in the body, and on this account it is more liable to **dislocation** than any other joint, and it requires for special reasons particular care and judgment in bringing about its movements when stiff or painful. I think it is most frequently the seat of rheumatism and neuralgic pains ; at all events, in my own experience *stiff* shoulder joints are most frequent. **The Hip Joint** is often the seat, and perhaps it is most frequently the seat of organic changes in its structure. **The Ankle** and **Wrist** joints are often the seats of sprains, more particularly the ankle, and for the reason that the effects of sprains are very lasting, and oftentimes very troublesome to cure ; so your services in respect to these joints will be often required.

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If you are thirsty for increased information concerning joint affections, you must consult my published lectures. You are

now in possession of such an amount of **general** knowledge of the parts entering into the formation of the extremities, that I can without more ado take the **upper extremity** and explain to you, as far as it is possible in writing and consistent with brevity, the various modes of procedure which are usually adopted.

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Upper Extremity. — After examining the limb which, let me tell you, consists of the arm, the **forearm**, the **hand**, and the **fingers**, you make **friction** movements over its surface, then move all the joints of the fingers to see that they are **free**, after the manner crudely shown in the illustration on next page (*Fig. 2*).

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I must remind you that illustrations, although doubtless they convey an idea of movements and manipulations, still they cannot be absolutely teaching in

themselves. You must see them executed and practise them for yourself over and over again, and then have



Fig. 2 illustrates the first position for manipulating the finger joints of the upper extremity.

them made upon yourself. You cannot become accomplished or skilful in any other way. The slovenly, careless and disgraceful manner in which so-called teachings of massage have been carried out merely in order to get fees, deserves nothing but the severest condemnation, and has led to a vast number of people styling themselves Masseuses, nineteen-twentieths of whom are totally ignorant of the subject.

The following illustrates simply the

movements of the metacarpo-phalangeal joints (*Fig. 3*).



Fig. 3 illustrates passive gymnastics of the metacarpo-phalangeal joints.

Having found these joints free, or freed them if bound, you grasp the hand lightly in your own hands, and perform what I can only describe as molar and pressure movements, and these you must continue till the parts have been made warm. You then work glidingly with your thumbs upon the dorsal surface of the hand whilst your fingers are digitating the palmar surface. After this you lay the back of your patient's hand flat in your own left hand, and with the palmar surface of your right hand exercise brisk friction and percussion

movements. The position of the hands can be seen in *Fig. 4*.



Fig. 4 illustrates the method for working into the palm of the hand.

You then use what I call the petrissage claw hand (to which I have previously called your attention) to the muscles of the ball of the thumb after the manner shown in *Fig. 5*. In some cases, notably of commencing muscular atrophy, this form of exercise is most useful. After this, with a few general rolling movements the operations upon the hand are completed.

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I now direct your attention to the wrist joint. By flexion and extension as well as



Fig. 5 shows a common mode of petrissaging the muscles of the ball of the thumb.

lateral movements, you ensure the perfect freedom of this joint. (*Fig. 6.*) Let me tell you that you work up the limb by stages from joint to joint, that is, from the wrist to the elbow and from the elbow to the shoulder. I may say that thorough manipulation of the joints, whether they require it or not, is one of the essential

features of my system ; for I hold that so long as a joint remains badly nourished,



Fig. 6 shows the flexion and extension of the wrist joint

so long will it be impossible for the nutrition of the limb to be improved.

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The wrist joint is the least animal of all the joints in the body. By this I wish you to understand that it is the most

complicated, the most complex, and the most human. You must work deeply with fingers and thumbs, the ligaments, the tendons, and other structures (*Fig. 7*). You



Fig. 7 shows the way the wrist joint is massaged, fingers and thumbs working simultaneously.

then perform similar movements by means of your forefinger and thumb, then grasp the hand and arm firmly and move the joint by flexion and extension. You will please to observe that you manipulate the parts from joint to joint, and not travel

all over the arm in a helter-skelter, indefinite and indeterminate manner.

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After the wrist comes the **forearm**, or the part between the shoulder and the wrist, commencing with **movements, rapid light friction**, to and fro. Then squeeze the arm from below upwards two or three times. The getting-up-stairs movements as recommended by some authors are not required. Remember that I instruct you to carry your manipulations from periphery towards the centre, that is, of course, from the tips of the fingers to the shoulders. You are then working in the direction of the flow of the lymph and venous blood; but in using **vibratory petrissage** with the claw hand, where you are acting particularly upon the capillary circulation, you need not observe so strictly the instructions just referred to.

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Let me now tell you, once for all—and it is a matter of great importance,

as you will soon find—**never** operate upon **extended** limbs; always have the limb flexed: the **forearm** must not only be flexed, but it must be **pronated**, so that every muscle is brought into a state of **relaxation**. The following (*Fig. 8*) con-



Fig. 8 indicates fairly well deep petrissage of the forearm. The thumbs are placed upon the limb vertically, so as to throw the heel of the operator's hand into the process.

veys an idea of a petrissage manipulation, but the part is not flexed and pronated as

it ought to be. It is intended to demonstrate pressure.

You will remember that, after friction and squeezing, we have **four petrissage manipulations** for the arm, namely, **superficial pressure, deep pressure, vibratory pressure, and rolling pressure.** Localized manipulations may be required for special structures. **In all pressure movements the hands must mould themselves to the tissues.** Superficial petrissage manipulations are best performed by the fingers and the balls of the thumbs. The palms of the hand are only brought to bear upon the parts **somewhat** lightly. Beginning at the wrist you work up to the elbow, **never moving** your hands from the part. When you arrive at the elbow, do not remove your hands, but draw them lightly downwards to the wrist, and again repeat the upward movements. These manipulations act upon fat and cellular tissue and skin, as the parts are pressed and rolled together.

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The **deep movements** are caused, not by making **uniform** and **steady** pressure by the whole of the hands, but particularly by the heels of the hands and the balls of the thumbs. By this means you can press the tissues down to the bones.

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Vibratory Petrissage. — One of the best manipulations for stimulation and pressure is what I call vibratory petrissage. Performed **rapidly** with the claw hand over the fleshy eminences, it is by no means disagreeable to the patient, and it often quickens the circulation, and brings about heat and colour when other manipulations fail to do so. The hand is worked chiefly from the wrist, but these movements must be seen to be comprehended. Rapid vibrations with pressure are the chief points to remember.

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I have now described the chief manipulations for the forearm, and the next step

is to perform extension and flexion of the elbow joint, after the manner shown in *Fig. 9*. You must make the movements



Fig. 9. Passive gymnastics of the elbow joint.

six or a dozen times, and clearly understand that the muscles are in a passive state, and that the patient does not exercise any volition whatever ; but on the other hand, remember that under given conditions it is necessary to ask the patient to make some resistance to bring **volition** into play, and so develop normal functional

activity. This is very necessary where muscles are improving and gaining tone after debility and fatigue. I commend especially to your notice all forms of passive gymnastic exercises. After flexion and extension at the elbow joint, you must see that the radio-ulnar joint is free by pronation and supination of the forearm.

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The **elbow joint** can now be manipulated, and we next proceed to work the



Fig. 10. Light friction rolling; effleurage movements of skin; deep petrissage movements can be effected by exerting increased pressure.

arm between the elbow and the shoulder, and here the movements are precisely

similar to those for the forearm. This part presents a fitting sphere for rolling movements between the hands, as shown in *Fig. 10*, or light hacking movements may be executed with the ulnar sides of the fingers, as shown in *Fig. 11*.



Fig. 11 shows position of the hands for light ulnar-tapotement. This form of tapotement is usually applied to the abdominal muscles.

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You must now proceed to manipulate the **shoulder**, and carry out the various movements at the shoulder joint. At the upper extremity of the arm you will find a mass of muscle (deltoid), which is very prone to undergo rapid wasting, so it will of necessity require special attention, and of all manipulations for this part I know of

none equal to vibratory petrissage. Concerning the movements at the shoulder joints, you will, if you are not careful, be very liable to fall into error, especially if



Fig. 12 shows position for manipulating the shoulder joint; the operator fixing firmly the clavicle and scapula with one hand, whilst the movements of the joint are effected by the other hand.

your object is to break down any adhesions; the upward movement proper to the joint is to raise the arm almost to a right angle

with the trunk of the body. In order to bring about the movements of the shoulder, it is customary for the operator to place himself behind the patient (who is seated in a chair), and fix the scapula by pressing firmly upon it and the clavicle, as shown in *Fig. 12*. You must not fail to observe how necessary it is to fix the scapula if you wish to make yourself quite sure of the limitation of movement of the shoulder joint proper, and you will find that the other movements of this joint are best made by those means, both with regard to the position of the patient, and the position of yourself. Again, you will see by the figure that by grasping the arm firmly at the elbow with the right hand, and at the same time pressing firmly with the left hand, you have complete power over this joint. I have written all that is demonstrative about the manipulations in connection with the upper extremity, and for all practical purposes, if you carry out fully and carefully these directions, you

will not be far wrong. There are certainly other points of detail which belong essentially to practical teaching, and must be reserved for other opportunities, as it is impossible to put them into writing.

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Let me now direct your attention to the **lower extremity**, which consists of the **Thigh, Leg, and Foot**, and let me tell you that the general principle which I have just laid down for the upper extremity must be followed in great measure for the lower.

I advise you not to massage any other part but the arm until you have made yourself quite familiar with the different modes of manipulation hitherto enumerated. You commence at the foot, and work upwards to the top of the thigh. If your patient is not in bed, you can be seated in a chair, with your patient's leg in the position shown in *Fig. 13*.

Just as in the upper extremity you



Fig. 13 shows merely the common way of commencing work upon the ankle joint for flexion and extension.

began by working at the finger joints, you now commence at the lower extremity by working all the toe joints; you then manipulate the foot in the same way that you did the hand (*Fig. 14*), and work the heel of your hand well into the sole of the foot. The inner and outer parts of

the ankle require active pressure movements, first with the tips of the fingers, and then with the balls of either thumbs (right and left). Drop the heel into the



Fig. 14 indicates position for petrissaging the foot and working at the same time with the fingers into the malleoli.

palm of the hand, and use brisk friction ; after this you map out the large tendo Achillis and work well with your fingers into the depressions to be found on either side, and then into the tendon itself. You will, in the course of your practice, meet with more deformities about the ankle

and the foot than in any other part of the body, and you will find that slight deformities in this region can be cured by massage, but the large majority of cases will come under the care of the surgeon for operation, and the parts will require to have their functions restored by your manipulations after they have been encased for some weeks, and undergone atrophic changes.

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You will see that the **ankle joint** is quite free. Its movements are more limited than are those of the wrist: we find only flexion and extension, with slight lateral deviations. You will now proceed to massage the calf of the leg: that is, the part from the ankle to the knee, in a manner somewhat similar to the forearm, and after what I have told you, I am quite sure you will not forget to see that the part is in a position of flexion, so that the muscles are as relaxed

as possible. You can make the tibia a fulcrum. A very excellent way to manipulate is to have the patient lying down with the extremity flexed at the knee and lying flat upon the bed ; you can then grasp the muscles with both hands without any interference from the shin-bone.

* * * * *

I must now say something to you about the **knee joint**, for this joint is probably more prone to swellings than any other joint in the body, and the swelling is usually accompanied with pain. I shall therefore show you how best to operate in order to give your patient as little pain as possible by your manipulations, or relieve the pain if it exists. I would advise you never to meddle with the knee joint, unless under the advice of a surgeon. If you are not careful you might do a great deal of harm. No other synovial sac is capable of such extreme distension as that of the **knee joint**. Under ordinary

conditions the amount of synovia in a joint is just sufficient to keep the parts of the joint lubricated; but it sometimes happens that the **knee joint** contains over a pint of fluid, or even more, and pressure of some kind from without is frequently necessary to bring about its absorption. I have to tell you how you are to manipulate to exercise this pressure to bring about absorption.

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Lubricate your hands well with a mixture of equal parts castor oil and chloroform; place one hand firmly six inches



Fig. 15.

above the knee, and the other six inches below it (*Fig. 15*). With a fairly strong grip you advance the one hand downwards, and the other hand upwards to within about four inches of each other, and you will now be exercising pressure upon the outskirts of the swelling. Don't relax your hold of the parts, but carry your hands bilaterally, that is to say, one hand will now be on the outer side of the swelling, whilst the other is upon the inner side. You then press equally upon the swelling with both hands, using pressure and counter-pressure; continue these gliding and pressure movements for ten minutes or a quarter of an hour. Of course you must exercise pressure in direct ratio with the pain and sensibility of the part; if there be little or no pain, such as you find in **bursal** swellings, then your movements may be active; but if there be pain, then your movements must be slowly, steadily, and carefully conducted.

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With these observations concerning a **swollen knee joint**, let me again direct your attention to the more general massage for the lower extremity, where, for example, we find that no special joint is affected. If you remember, we finished with the calf of the leg, so that we now have to manipulate the normal knee, and carry out the usual movements of this joint by making flexion and extension (*Fig. 16*).



Fig. 16 shows position for ordinary knee and hip movements (passive gymnastics).

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You now proceed to manipulate the thigh from the knee to the hip, and in order to do so efficiently, the thigh must be flexed, so that in this ease you work downwards, and you will have to use deep and sometimes powerful pressure manipulations to influence the deeper muscles. Remember, if the parts are of such a nature that they do not yield to one set or form of manipulations, don't hesitate to employ any or all with which you are acquainted, **for you must obtain results.**

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Lastly, in reference to the lower extremity, you have to bring about the movements at the hip joint. I repeat that it is like the shoulder, a ball and socket joint, its chief movement being **rotation**. It is sometimes necessary to throw the thigh well over the abdomen **as far** as possible, in order to put certain structures on the stretch, particularly the **sciatic nerve**; you will have no difficulty in

effecting this. *Fig. 17* gives you an idea of this movement.

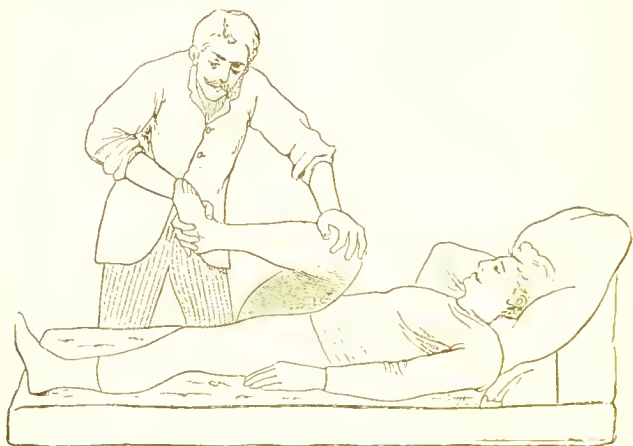


Fig. 17 shows position of extending and stretching sciatic nerve by flexing the thigh well upon and over the abdomen.

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After manipulating the extremities (and never before doing so, unless under exceptional circumstances, which have been noticed) you anoint. By this I mean, you rub in lightly a small quantity of olive oil to aid in maintaining the tem-

perature which your manipulations have created. I have before endeavoured to impress upon you the necessity of this proceeding. The production of heat, and the maintenance of heat, are of vital importance, and must never be overlooked.

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Let me now call your attention to another form of massage, namely,

TAPOTEMENT.

Tapotement signifies tapping, and all the associated forms of applying energy, which come under this designation, are said to be percussive, succussive, concussive, and vibratory in their nature. I shall endeavour to make you understand what I am of necessity compelled to reiterate, namely, that each form

of massage acts pre-eminently upon certain systems of the human body, and upon certain tissues of those systems. We have seen that *effleurage* acts specially upon the peripheral nervous system, that *petrissage* acts particularly upon the peripheral and deep parts of the circulatory system. And now let me tell you that *tapotement* acts specially upon the trunks of nerves. Of course I do not for one moment wish to make you believe *tapotement* acts upon the trunks of nerves and no other tissues, or that *petrissage* acts upon the circulatory system of tissues and no other, but I do say that our various modes of manipulation specialize their energy upon certain tissues more than others.

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We say then, if you please, that *tapotement* movements are particularly applicable to the back, chest, abdomen, and the trunk of the body generally.

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All these movements, to be effective, must be performed with rapidity, always remembering that we have to bring about vibration. Then, if you please, **quickness, rapidity** and **lightness** are the especial attributes of these manipulations.

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You will find that with practice you will be able to graduate these movements, so that they are scarcely appreciable by the patient; whereas, on the contrary, you can use much more force than your patient is able to bear.

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I advise you when operating in this way to keep your arms close to your sides, and work almost entirely with the forearms from the elbows. By this means you can graduate your movements with the greatest exactness and delicacy, never raising the hand more than half an inch from the surface of the body. We shall

see that **tapoting** and **hacking** are more or less synonymous terms.

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Percussion or **vibratory** manipulations are effected by various conformations of the hands.

The first form of hand to which I would call your attention is the closed hand, something after the nature of a fist. Throw the ball of the thumb into the palm of the hand, then bring your two first fingers upon the ball of the thumb, the ring finger and little finger being brought towards the palm (but not touching the palm); you thus form a **partially** closed hand, hollow in the centre. Make a closed hand or fist, and compare the former with the latter, and observe the difference in the effects of each when applied to the body. You will soon discover that the movements of the hand partially closed as described, are of a much lighter character. The following

figure (*Fig. 18*) conveys an idea of this form of manipulation.

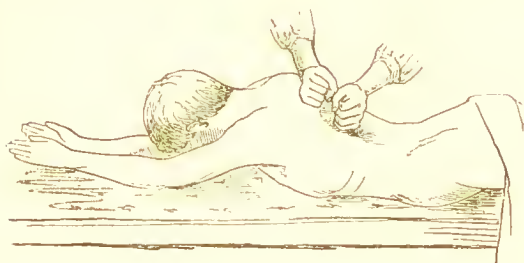


Fig. 18.—Tapotement ; vibratory percussion.

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The second form of hand is that which might be called the **boat** or **saucer** hand. The fingers and thumb are slightly flexed, so that the palm of the hand forms a concavity.

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The other forms of hand are what we call **flail hands**; the first of these is, perhaps, the best of all. The hand is worked very **loosely** and **rapidly** from the wrist, so that the **finger tips** are

brought into contact with the surface of the patient's body as quickly as possible. Another form is when the backs of the fingers are used ; and lastly, we have two forms of hand which are certainly useful for purposes of hacking, such as the one seen in the following figure.



Fig. 19.—Tapotement ; position of hands for hacking.

I must now endeavour, as well as I can, to make you acquainted with massage for the Spine and Back.

In mass'eing the back we have to consider, not so much the parts which come immediately under the influence of our manipulations, as those which are influenced indirectly by them. It is quite true that we have to deal directly with a mass of muscles, whose activity and inactivity deserve consideration. I think it must be obvious that in languid circulations the venous and lymphatic currents in these parts must be subject to considerable retardation, and of necessity metabolic changes must be inactive ; both ordinary respiration, and more especially extraordinary respiration, aid the circulation of the blood through them. I am inclined to believe that nitrogenous products, such as urea and uric acid, accumulate unduly in the juices of their tissues ; and although I know that this is hypothetical, still it is quite possible that

they may be the means of imparting to the general circulation an amount of waste material with which the ordinary processes of oxidation are unable to cope, giving rise to gout and rheumatic gout, and probably to disease and functional disturbance in other ways. Let this be as it may, we know that by our massage movements we stimulate the circulation through these muscles to increased activity, and we believe that by so doing we also stimulate the circulation of the spinal cord. The vast importance of masséeing the back can only be underrated by those who are blind to experience and common sense. I have considered many questions of great interest relative to the spine in my lectures, which would be out of place in this handbook, which is intended only for those who wish to obtain some precise information relative to manipulations.

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Given a patient whose back is to be

masséed, the first thing to be done is to cause him to lie down, placing a cushion under his chest, and making him throw the arms completely forwards on either side of the head. By this procedure the parts are raised, and the surface presents an even and regular outline. It is well for you to make slight pressure upon the spinous processes, to elicit a knowledge of the existence of any painful parts, should such exist, or of any twisting or curvature. You can now feel the ribs which are attached to the vertebral column, extending outwards and downwards on either side. The following figure (*Fig. 20*) conveys an idea of the position referred to.



Fig. 20 — Digital petrissage for the back ; the fingers are made to travel up the back and drag the wrists after them, without raising the hands from the surface of the flesh.

Now your first procedure is to rub **briskly** and lightly every part of the back and loins (**friction movements**). After this you petrissage with your fingers and thumbs, very quickly, the whole of the back. You commence at the seventh cervical spine, and work downwards and outwards in the direction of the ribs. You then repeat the process from below upwards, and so you continue until every part of the back has been covered, and if your manipulations have been duly and properly performed, the skin will be, or it should be, of a uniformly red colour. The next movement is to place the heel of your hand at the lower part of the spine and carry it **lightly** upward, and when the hand reaches the top of the scapula, throw it forward, and implant the knuckles on either side of the spinous processes, carrying them right down the whole length of the backbone, with considerable pressure. Next you place your hands on either side of the backbone, and

walk your fingers up the centre of the back, using considerable pressure with your fingers and the heels of your hands. When your hands reach the top, you grasp the muscles at the root of the neck, and exercise brisk vibratory petrissage manipulations. You repeat these movements some six or eight times, according to circumstances. You then place one hand flatly upon the other, and work by pressure into the deep muscles on either side of the spinous processes. This is now the time for your percussion manipulations, and these you carry out after the manner to which I have just referred. Lastly, you perform friction movements with the flexor surface of your arm, briskly and firmly, over the entire back. The whole process should be completed in from five to ten minutes. As a rule, your patients will derive great comfort, and feel better in every way, from your operation.

Curvatures of the Spine.—The services of the masseur will be frequently required

for **spinal curvatures**, and the value of massage in respect to these conditions is now being recognized and generally adopted. In **angular curvature** of the spine, local massage is, as a rule, to be deprecated, especially when it is known that active mischief exists in some part of the vertebral column, yet we are bound to admit even in these cases that massage of the limbs is of great value to promote and avert the wasting which is common, and due to the arrest of function from **deficiency of natural exercise**. It is quite different, however, in **lateral curvature**, where the vertebral column assumes the form of the letter S. **You must know** that it is to the **vertebral column or back bone** that all the other parts of the body are attached. In its cavity is enclosed the central nervous system, the upper part of which in the course of development becomes gradually enlarged and forms the brain, while the bony portions which surround it widen and form the skull. It not only forms

the support for the central nervous system, but also for the vitally important thoracic and abdominal organs, and thus Galen not unjustly compared it to the keel of a ship. Corresponding with its great physiological importance, anomalies in position of the vertebral column have a disturbing influence upon a great number of the more important organs of the body, corresponding to the many structures which are supported by this column, it is peculiarly exposed to various anomalies of position. The formation of this bony column, consists of seven cervical, twelve dorsal, five lumbar vertebræ, and five sacral vertebræ (coalesce into one bone), as well as the four coccygeal vertebræ, the coccyx (an unimportant rudimentary appendix). The erection of these small bones upon a proportionately narrow basis, their connection by the elastic intervertebral discs, their limitation by the oblique processes and laterally projecting transverse processes, which in the thoracic

vertebræ articulate with the ribs ; the ligamentous union of all these parts which cover the bodies consists only of the weak anterior and posterior longitudinal ligaments, but attains the highest degree of firmness at the processes ; the attachment of numerous muscles which are amongst the strongest in the whole body ; the continued weight sustained by it owing to the erect attitude of man—all these peculiarities produce mechanical conditions of such complexity as to make our comprehension of the normal carriage of the body, and especially of the pathological deviations therefrom, extremely difficult. It is not, therefore, surprising that deformities of the vertebræ have attracted more attention than have deformities of other parts of the body, and that their comprehension is as yet, on many points, imperfect."

* * * * *

Lateral Curvature of the Vertebral

Column is more common than the other form of curvature. It is not unfrequently caused by congenital irregularities of the vertebral column itself, or an unequal operation of weight upon the two halves of the spinal column, or on unequal muscular action.

* * * * *

The normal movements of the vertebral column consist in antero-posterior, and lateral flexion as well as in rotation upon the vertical axis of the body, by which the front of the body may be turned more or less to the right or the left, while the pelvis remains stationary. There are **three grades** of lateral curvature, and it is only to the first grade to which, from the massage point of view, I wish particularly to draw your attention, and which, in my opinion, is most frequently due to **nerve** and **muscular** defects. It is attended with slight deformity, and not infrequently the outer form of the clothed

body gives little or no indication of its existence. The case is different in the **second grade**, where there is a marked change in the symmetry of the external appearance which at once strikes the practised eye, on account of the shortening of the upper part of the body, the projection of the back, and the large circumference of the waist ; and although in the second grade of curvature we cannot hope to obtain such good results by properly applied massage as in the **first grade**, still I look upon it as an essential and important aid to treatment. **Therefore, please let it be understood that I strongly recommend massage for lateral curvature of the first grade.** It is far from my object to tell you of the recognised surgical methods of treatment for this form of curvature, but from the writings of others with which I have made myself familiar, I fail to see that systematic massage has been adopted to the extent that I think it should be, especially in connection with gymnastic

exercises. Let me tell you again once more that deformities are primarily and for the most part due to defects in the neuro-muscular apparatus, and for this reason, when speaking to my class of muscles and nerves, I make it an essential feature of my teaching to demonstrate this to my pupils, and put them through the practice of performing every muscular movement.

The feeling of fatigue is sometimes the first indication of curvature of the spine, and should be carefully considered in every occupation of daily life. Not only should the erect posture of the body when standing be maintained in every possible way, but at times an inclination should be directed in the position opposed to the curvature.

* * * * *

Lateral curvature is the common deformity of childhood and youth, so that in writing and other sedentary occupations it is necessary that the child should sit at a

large table with straight (not rounded) edges, the chair so placed that the edge of the table is exactly above the front edge of the seat, the height of the seat such that the elbow can rest on the table in a natural way. The copy-book must be straight upon the table, and the head must not be inclined to one side. The seat should have a tolerably high back, so that the child, when fatigued, can rest his back against it. The manipulations for the back are those which have just been described, and if done at all they must be done thoroughly and completely. I quite agree with the teachings of those who admit "That to detect a **very early** spinal eurvature it is quite unnecessary to look at the spine." Gait and posture are alone frequently indicative of back weakness, which should never be neglected, for here we invariably find the **first grade** of lateral curvature, and it is too often the case that lateral curvatures are first discovered by the dressmaker. Therefore,

let me say again that for the first grade of lateral curvature of the spine there is no treatment of equal value to back massage and carefully conducted gymnastic exercises and body reclinations.

* * * * *

I must now leave the question of spinal curvatures and draw your attention to **Abdominal Massage**. Let me tell you that here your real difficulties as masseuses begin. It will take you months and months with daily practice to manipulate this region with any hope of being successful; and both caution, care, knowledge, and skill are required to carry out these manipulations effectively and judiciously. To press and pommel the belly is one thing, but to massage with dexterity and to know something of the principal structures upon which your movements are being exercised, is a different thing altogether. I will endeavour (as far as it is possible to convey my meaning in words)

to make you acquainted with the leading features in connection with the abdomen, and the massage processes associated therewith, but it is impossible for me to portray these very carefully systematized manipulations in any other way than by repeated demonstrations.

In this little book the handicraft alone of Massage is brought prominently before the reader's notice, and when I refer to physiology or anatomy, it is only in a degree limited to an absolute necessity for, as I said before, the science of the art can be found in my lectures.

* * * * *

The necessity does exist for me to make clear to you certain boundaries of the abdomen and regions wherein you should know that parts are located with which you will have to deal. The following diagram may aid you (*Fig. 21.*)

In the right hypochondriac region we find the **Liver** and **Gall bladder**, etc.: in

the epigastric region the **Stomach**, etc. :
in the left hypochondriac region the
Spleen, etc. : in the lumbar regions the

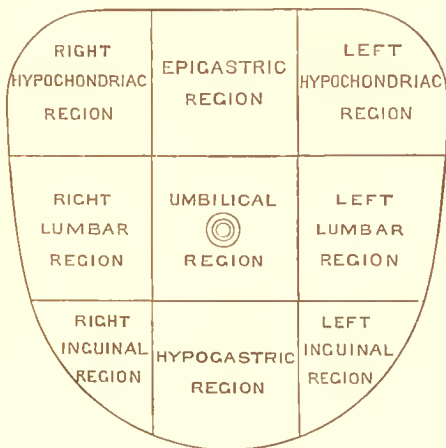


Fig. 21, showing Abdominal regions.

Kidneys, etc. : in the umbilical region the
small **Intes'tines**, etc. : in the hypogastric
region the **Bladder**, **Uterus**, etc. The
intestines are divided into large and
small.

* * * * *

The large intestine commences in the right inguinal region, and ascends to the Liver through the iliac lumbar and hypochondriac regions, crossing the abdomen below the stomach it reaches the left hypochondriac region, and it lies in this the transverse part of its course, between the epigastric and umbilical regions. Finally, it descends on the left side, through the regions corresponding with those it occupied on the right, forms a remarkable bend (sigmoid flexure) in the left iliac fossa, and enters the pelvis, to end on the surface of the body.

I have thus given you the course of the colon with the object to impress upon you the necessity of always exercising your abdominal manipulations in a direction from right to left. You must really never fail to remember this point in abdominal massage, which is of the highest importance in all abdominal movements. Always work from the right to the left hand side of your patient.

You will soon find out that abdomens differ in general configuration, and that the chief cause for this is age, flatulent distension, and deposits of fat. Sometimes you will find the muscles of the anterior abdominal wall so hard and rigid that it is impossible to relax them; but on the other hand the anterior abdominal wall may be so thin, soft and supple that the posterior abdominal wall may be reached without difficulty.

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Before manipulating this part of the body, **you must see that the bladder is empty.** This is very important, for the bladder in hysterical cases may be distended above the umbilicus without the patient being conscious of the fact. Place your patient in the horizontal posture, raise the head and shoulders some six or twelve inches; the thighs must also be raised by placing a pillow or two at their under part, towards the bend of the legs.

In order to get the abdominal muscles completely relaxed, make the patient keep the mouth open and draw up the legs to the trunk as high as possible ; but the first is the best position for ordinary massage. Try the sensitiveness of the abdominal muscles to reflex action, which you will always find very variable ; in some it will be so active as to produce abnormal movement in the bowel itself. Before commencing to manipulate, make pressure upon different parts ; firstly, to discover if there is anything abnormal, and secondly, to find out if there is any tender spot. When masseéing for constipation, always smear some lubricant over your hands ; there is nothing better than liquid vaseline or castor oil ; it is scarcely credible, but upon several occasions I have thought that the use of castor oil in this way increased the tendency to peristalsis.

You now effleurance over the abdominal wall, and remember that all your move-

ments should be in the course of the large bowel, from **right** to **left** of your patient, upwards on the **right** and downwards on the **left**.

Pick up the skin, areolar tissue, and fat by the usual petrissage movements, beginning in the **right inguinal region**, and working round to the **left inguinal region**. If you have to bring about the absorption of fat, **great rolls of fat**, you must grasp it firmly in your hands and knead and squeeze it as though it were dough.

In the following (*Fig. 22*) you will see



Fig. 22 shows the position of the thumbs and the hands for upward and circular movements in the course of the colon. All movements being directed from right to left.

the position of the thumbs and hands for

the first manipulation. You work upwards with semi-rotatory movements in the course of the ascending colon, until your hands arrive at the ribs, and here you meet with the free edge of the liver and the gall bladder. Here you make a halt in order to manipulate the gall bladder, and I shall say something about the gall bladder shortly. However, having arrived



Fig. 23 shows the position of the hands one over the other for pressure movements in the course of the colon.

at the free edge of the liver, and manipulated the gall bladder, the position of your hands must be altered. You now

place one hand on the other, as shown in *Fig. 23*, and proceed to carry very carefully adjusted **pressure gliding** manipulations along the course of the **transverse** and **descending** colon.

* * * * *

All your movements must be done rhythmically, quietly and regularly at first. When, however, you find that they are unattended with any discomfort to your patient, they may be carried out with considerable rapidity. **But under no conditions is it justifiable to perform abdominal massage in a hurried and jerking manner.** After repeating these **ascending transverse** and **descending** movements some **six** or **eight** times, the manipulations must be more general. Place the palm of the **left** hand well into back and side of the **right** lumbar region, and place your **right** hand in the same position upon the **left** lumbar region; you now exercise considerable upward

pressure, so as to mass the abdominal contents together. You now vibrate the abdominal contents by placing your hand flatly and firmly over the umbilicus upon the centre of the abdomen ; keeping your hand **fixed** you produce a series of vibrations. This is a very important and complex act, and of the greatest possible value ; **unfortunately words cannot describe it.** Lastly, rapid but very light hacking movements with the ulnar edges of the hands, and particularly of the fingers, may be applied from right to left. I must now say something to you relative to masseéing the liver and the gall bladder.

* * * * *

Physiology is no longer the exclusive property of scientists and medical men. The many popular manuals of the elementary principles of physiology, written by men of the highest eminence, have brought a knowledge of this subject within the scope of all. There-

fore let me commend to your reading a little book (Science Primers) on Physiology, by Dr. Michael Foster, (Published by Macmillan & Co.). It contains a vast amount of information placed before the reader in the most practical form, and thus reducing points of complexity to their most simple rendering.

* * * * *

You will in the course of your work be very often called upon to manipulate and percuss and vibrate the liver, and you should know its position and range, and the position of the gall bladder. Let me tell you that in my opinion your services in this respect are most useful, and I cannot refrain from saying that they will often enable a "liverish patient" to throw aside his quack nostrums, his podophyllin and blue pills. Of the great importance of the liver in the animal economy no one can doubt; and of its great liability to derangements, and specially in tropical

countries, everyone is certain. Dr. Michael Foster, in the little Primer on Physiology just alluded to, tells his readers to go and ask the butcher for a sheep's pluck in order to study the association of the lungs and heart, respiration and circulation. I advise you also, if you are desirous to make yourself acquainted with the position of parts, to frequent the butcher's shop and your own kitchens; you will thus not only see parts as they exist in yourselves, but you will become acquainted with their anatomical relationships.

* * * * *

The liver is the largest gland in the body; it secretes bile, which flows as it is secreted into the gall bladder, and all I want to do in reference to the liver is to give you an idea of its position. It is situated in the **right hypochondriac** and **epigastric** regions, and extends slightly into the **left hypochondriac** region. The

upper surface is convex, and fits into the vault of the diaphragm. The **right** portion, more prominent than the **left**, reaches to the level of the **fifth intercostal** space, and its posterior thick border lies on the pillars of the diaphragm and the large vessels.

* * * * *

The **gall bladder** is the receptacle for the bile. It is situated, as you can see in the rabbit, in a depression on the under surface of the **right** lobe of the liver. It holds rather more than an ounce of bile, and it is to be found in a fairly direct line with the curve of the ascending and transverse colon behind the **ninth** costal cartilage.

In operating upon the ascending colon, you will remember that I particularly impressed upon you that when you reached the ribs you were in the immediate neighbourhood of the gall bladder, and that here you made a halt,

and worked by deep vibratory petrisage into this viscus.

I have entered fully into this subject in my lectures, and I must refer you to them for further information.

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In describing the position of the liver to you, I have endeavoured to make it clear that under ordinary conditions the liver is entirely protected by the ribs, save the projecting thin anterior fringe. It is true that when the patient is standing, or even sitting, the anterior margin descends lower than when the body is horizontal, but unless the liver be enlarged, you are quite unable in any way to grasp its substance, and it is for this reason that I speak to you of making your manipulations over this organ concussive, succussive, and vibratory. One thing must now be evident to you, and this you must of course bear in mind, namely, that to act upon the liver thoroughly and completely,

your operations must be executed from behind as well as in front. There are two positions in which to place your patient ; the first is that just described for abdominal massage, with the thighs and thorax well raised. I prefer this position both for acting upon the liver and the gall-bladder. I place the palm of my **left** hand firmly upon the ribs in the **left** hypochondrium, and the palm of my **right** hand firmly upon the ribs in the **right** hypochondrium, making the left hand a **fixed point** by its steady continuous pressure upon the ribs. I now produce with the heel of my right hand a series of pressure and relaxation movements over the liver, exercising a fair amount of force. I make my pressure synchronous in time with each inspiration, but what is better still I ask my patient to breathe by extra-inspiratory efforts, and then use pressure just at the pause between inspiration and expiration, relaxing the pressure at expiration. This

action upon the liver is percussive, concussive, and succussive, and does more to stimulate the liver, to perform its function, than any other process with which I am acquainted. These movements must be continued for three or four minutes, and I must not forget to tell you that the pressure must sometimes be applied by rapid, jerking, vibratory action of the arm. It requires a little practice, but if it be well done it positively shakes the liver. We now turn the patient upon the belly, and map out carefully the exact position of the mass of the liver, from the fifth or sixth rib downwards, and here we use tapotement movements freely and thoroughly. Sometimes I petrissage the skin very carefully over the hepatic region and use intercostal pressure with my thumbs, but I rely more upon the percussive action. Some authorities think it better to have the patient in the sitting posture, resting upon the elbows with the body inclining forward, as it is said to

relax the abdominal walls and allow the liver to gravitate downwards and forwards. I do not deny that this position may be a good one. I never adopt it ; firstly, because the position of the patient is an inconvenient one for the operator ; and secondly, because it is generally admitted that in the upright and sitting posture the liver usually recedes behind the ribs. If you have to massage the liver specially, you must not do so after a full meal ; two or three hours should have elapsed. The best time is when the chyme is passing into the duodenum, **when in fact the chyle function is in full operation and the gall-bladder and pancreas are in a state of activity.** The position of the liver, it must be remembered, varies according to the greater or less distension of the stomach and intestines ; when the intestines are empty the liver descends in the abdomen, but when they are distended it is pushed upwards. At every meal there is an increased flow of

blood to the liver and also to the stomach.

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For **constipation** I must say that you have in the movements which I have explained to you for the abdomen a very potent and natural remedy. We may look upon constipation as one of the common ills of life, if it is not the cause of many of those troubles which are known as functional. Certainly massage seems to be the best regulator of the bowels.

Occupation Neuroses and Cramps.— I now wish to draw your attention to a class of nervous affections which are peculiar to some people whose muscles are exposed to undue **strain, stress, and fatigue** from too prolonged occupation.

Some of these are marked with trembling, others with spasm and cramp, others with pain, whilst some have all these characteristics in association. Amongst

these occupation neuroses, we find "Telegraphists' Cramp," "Seamstresses' Cramp," "Pianoforte Players' Cramp," and the most important and probably the most common of all is **Writers' Cramp**. It is of this so-called writers' cramp that I am desirous to say a few words, because judging from my own experience massage is of far greater value in the treatment of this condition than any other means with which I am acquainted.

Writers' Cramp usually commences with a feeling of fatigue in those muscles which are called into play in the act of writing, and which control the movements of the thumb and two first fingers. As soon as fatigue has established itself tremors set in, rendering further muscular effort useless. The muscles of the thumb are most affected. At the onset an aching sense of weariness extends up the arm which soon renders the sufferer unfit for writing. The pen does not move quite as he intends it to do, the strokes are made irregularly, they

fall either too high or too low, and spasmodic movements create failure in definition. The first finger has a tendency to slip off the pen, and the more firmly the pen is held the greater seems to be the difficulty, until the pen is either dropped or jerked from between the fingers. Muscular fatigue, with aching, sickening and wearisome pain, may, for a long period, be the only indications of this troublesome complaint, but they will gradually increase in gravity and intensity, so that day by day the act of writing becomes more and more distressing and laborious, and finally absolutely impossible. A subject of this disease who at one time could write fluently for twelve hours at a stretch, is now unable to write his own name. It is interesting to note that this muscular weariness and incoordination seem in some cases to be limited to the act of writing; for other movements, such as playing the piano, or shaving, can be performed with perfect

facility, and the grasp of the hand is only a little weaker than it is in health. The pain is very variable, and may be referred to the joints of the fingers or to the fingers themselves, the thumb and the wrist, or it may extend up the arm to the armpit. The large nerves of the arm—and of course particularly the musculo-spiral—present signs of tenderness on pressure. Sensory symptoms are sometimes experienced, such as a feeling of tingling or pins and needles in the fingers, which appear to be quite independent of muscular derangement. This form of functional paralysis is generally found in members of both sexes who are of decidedly nervous temperament, anxious and over-worked, and who have by heredity some tendency to nervous disease. The act of writing is mechanical and should be performed almost automatically. In a large number of these cases there is not only too great a strain put upon the motor centres of the cord,

but the strain extends to the associated centres of the cortex of the brain. This defective power in both nerves and muscles appears to be of a purely functional character; there may perhaps be slight wasting, but this is altogether exceptional, and, should it occur, we are led conclusively to the opinion that the writers' cramp has originated in a nervous system where centres are prone to become, under given conditions, the seat of degenerative changes.

* * * * *

In the treatment of this affection most authorities are agreed that centralized rest of those muscles co-ordinated in the act of writing is absolutely necessary.

"Nussbaum," according to Schreiber, in an article published in 1882, "directs his patients to write as much as possible with the instrument figured and described below, which compels the wearer to use his muscles in a way diametrically oppo-

site to that he has always practised. He says to his patients: 'Write much with this apparatus, for the more you write the sooner you will be cured, and be able to hold the pen in the common way again.'” The celebrated Munich surgeon is of opinion that over-exertion of the flexors and adductors—these being the muscles chiefly used—is the cause of the cramps, and that the condition may be cured by

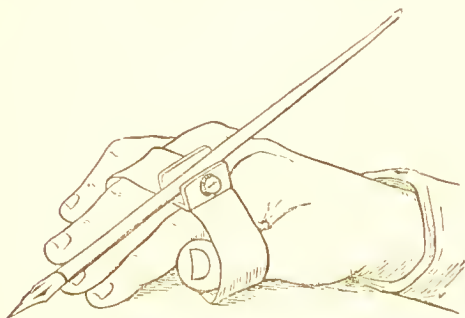


Fig. 24 —Nussbaum's appliance for writers' cramp.

using the extensors and abductors instead. To this end he has constructed the apparatus shown in *Fig. 24*.

It consists of a thin oval band of hard rubber about two centimètres broad, suitably curved for slipping over the thumb and all the fingers except the little one, which remains outside. By means of a clamp a penholder can be conveniently adjusted. The long diameter of the oval being made purposely somewhat longer than the breadth occupied by the fingers over which it is to go, the fingers will have to be spread apart, the thumb being drawn to the left, the fingers to the right, to prevent it falling off. Muscles are thus forced into use which are the exact antagonizers of those normally used, and at the same time the act of writing is transferred from the fingers to the whole hand, and motor impulses formerly sent to the flexors and adductors are now delegated to the extensors and abductors.

Nussbaum thus gives the result of his experience:—

“(1,) Every patient who formerly was unable to even scratch down his name, let

alone write a couple of lines, could, to his great surprise, write two pages consecutively without fatigue with the apparatus.

“(2,) No cramps ever occurred while using it.

“(3,) All agreed when using it, that those parts of the hand which were formerly the most painful, felt now even more comfortable than normal.

“(4,) After using the apparatus diligently for some time, a few patients felt intuitively that they were again able to use the pen in the old way.

“(5,) In treating this disease, it simply stands to reason that the cramped muscles must be thrown out of use while their antagonizers must be strengthened by gymnastics.”

I have for some years used this ingenious little apparatus, and my success has been most satisfactory when combined with massage in a manner which I will now detail.

* * * * *

The points to be attended to in treatment are : volitional rest to the affected muscles, and massage ; and the patient should exercise the muscles of the hand in writing, particularly the extensors and abductors by means of Nussbaum's apparatus three times a day for three minutes each time, and after doing so, the entire arm should be massaged precisely according to the manner directed, from the tip of each finger to the shoulder-joint ; and this should be followed by massage of head, neck, and spine night and morning—the time occupied at each operation being twenty minutes. The patient should be taught to exercise the fingers in marching order over the surface of a table for one or two minutes at a time, always beginning at the right hand lower corner by extending the thumb to its utmost limit. He commences in this way, and so marches onward to the distant left-hand corner in a diagonal direction, always stopping immediately if

it produces the least fatigue. This form of gymnastic movement should be varied in the following way: the hand and forearm must be laid flat upon the table on their extensor surfaces, and the thumb must be extended to its utmost limit and fixed in this position, whilst the terminal phalanges are flexed rhythmically and slowly towards the palm not more than half-a-dozen times. Now let me tell you that this is my mode of treating writers' cramp. In substance there is nothing original about it; in detail it differs from other recorded methods, and it is in the carrying out of details very minutely and carefully that we can hope to cure this very troublesome and distressing affection.

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I have to say a word or two to you relative to massage of the limbs in disease of the central nervous system. Let us take, for example, the various forms of

hemiplegia, some right, others left. In some the arm is most affected, in others the leg. In some there is rigid persistent contraction, in others the muscles are flaccid. The arms, rarely the legs, are sometimes the seat of burning, aching, wearisome pains. Right hemiplegia may be associated with spasms of the hand and fingers (athetosis); the muscular sense of the paralysed limb is also greatly interfered with. The question arises, Can we improve these paralyses, relieve pain, and help to restore power to the muscles, and co-ordinate movement by massage? Well, I can assure you that in some cases it is very useful, in others its influence is nil, and it does not require much knowledge of the physiology of the nervous system to tell us why it is not useful. But let me tell you this: If I neglected to advise massage to any patient who came to me suffering from hemiplegia, I should consider that I failed in my duty as a physician. It matters not

one atom whether the brain lesion be cortical or basal, thrombotic or embolic, anæmic or hyperæmic, large or small, coarse or fine, gross or delicate, whenever there be a paralysis, limited or extensive, purely motor or sensory, massage should be used. For I maintain that although the paralysis may be due to an organic lesion, still, by helping to maintain the nutrition of nerves and muscles by massage and passive movements, we aid the brain (if such be possible, that is, if the lesion is not too profound) to compensatory effort, and to the restoration of function in structures adjacent to the lesion. There are some people who seem to think that massage has to do only with the parts to which it is applied, say for instance, a muscle ; of course, this is a great mistake. The integrity of the muscle depends upon the integrity of the nerve, and the integrity of the nerve is dependent upon its nervous centre, and the integrity of the nervous centre

is dependent upon both nerve and muscle.

* * * * *

WEIR-MITCHELL TREATMENT.

I do not think that I can omit to say **something** about this now well-known and established form of treatment, although this little book is supposed or intended to deal **almost solely with massage from its mechanical aspect.**

It is only natural to find that this form of treating disease, which has been attended with such marked and unprecedented success, in some cases almost miraculous, should have given rise to a large following of people, calling themselves masseurs and masseuses, and the

physician in truth cannot possibly do without them. Some are thoroughly qualified for the work, and **others are utterly unsuitable.** This is to be expected, but as time goes on the chaff will be sifted from the grain, and only those who are best qualified and accomplished in their work will remain.

I have studied massage for many years, long before it became notorious, and, **my belief in its effects are unbounded.** It has been my delight to impart my knowledge to others, and my class is composed only of those who are blest with a good physique and sometimes with more than an average amount of intellect. I am in no way ashamed of my work in this direction, for I am confident that if massage is to take its place as a therapeutic agent (and it will), its manipulations must be carried out by those **skilled and practised** in its use ; but there must be a system and a science in everything, and the treatment of disease by massage

in a perfunctory way, without a complete and systematic knowledge, simply leads and gets the whole thing into discredit, and also, unfortunately, involves those who have associated their names with it. There is, however, some consolation in knowing it has been the means of curing a large number of nervous disorders which were, at one time, looked upon as hopeless and incurable.

We are already acquainted with all forms of massage manipulations, how they are to be applied, when they are best applied, and what are the usual effects produced by their application; we have also considered the influence of massage more or less upon the temperament and upon the character. I have told you more than once with reference to massage, that just as we build up the physical side of the human body, and just as we restore the functions of the muscles, so we also improve and restore the integrity and the normal

balance which should exist between the mind, on the one hand, and the body on the other, so that by our mechanical manipulations upon the physical side of our existence we also hope to restore derangements in the mental processes which are so intimately connected therewith.

Dr. Weir-Mitchell, who is the originator of this treatment which bears his name, lays down very definite rules, the carrying out of which should be strictly observed. They are **seclusion, rest, overfeeding, massage, and electricity.**

Seclusion.—In the matter of seclusion I am entirely and absolutely in agreement with Dr. Weir-Mitchell, and it undoubtedly forms the basis of his cure. This means nothing more than disintegrating these hysterical and nervous cases from the meshes of their old habits, and removing them from those who have been for too long a time the willing slaves to their caprices. **The importance of**

isolation should be absolute. We must break the chain which has been the means of binding the captive in captivity. No letters, or messages, or any other forms of communication with friends are permitted, and neither threats or entreaties must overcome the confidence of the nurse in this matter.

* * * * *

Rest.—At first sight it may seem strange that the cure should in part consist of rest, absolute and complete rest ; the patients not moving except to perform the ordinary offices of nature. They are fed like children, and must in this, as in all other matters, be made to feel themselves subordinate, and to practise and exercise obedience and self-restraint. In this way we are helping to rebuild a shattered moral constitutional state, which is equally as important as restoring the physical part of their being ; but we work on both at the same time, hoping and believing that

we shall repair the mental in direct ratio with the physical. Many of these patients, be it remembered, have been lying in bed for months and years, but they have not been at rest. On the contrary, they have suffered from great inquietude ; having given way to a chronic feeling of discontent they have been almost constantly alternating between agitation, peevishness, fretfulness, and outbursts of uncontrollable temper ; or moody, morose, and in a condition of unrest, possibly from imagining themselves neglected, when in reality those about them have been half dead of exhaustion, fatigue, and distress on their account, ever trying to please them, but always failing. “ Let us think, then,” says Dr. Mitchell, “ when we put a person to bed, that we are lessening the heart beats some twenty a minute, nearly a third ; that we are making the tardy blood to linger in the by-ways of the blood-round, for it has its by-ways ; that rest prone binds the bowels and tends

to destroy the desire to eat, and that muscles in rest too long get to be unhealthy and shrunken in substance. Bear these ills in mind and be ready to meet them, and we shall have answered the hard question of how to help by rest without hurt to the patient."

We must not forget, that confining a patient to absolute rest in bed, would, under ordinary conditions, be productive of a serious train of evils: exhaustion and debility are increased, the muscles become feeble, the joints stiff, the bowels constipated, the appetite impaired, the circulation enfeebled, and digestion and assimilation weakened. But we shall see in describing this treatment how these evils are overcome. What we want is a maximum of rest with a minimum of unrest of function. I have constantly been endeavouring to impress upon you that the healthfulness and activity of a part depends upon the due performance of function. If the natural function of a part be withheld its

integrity becomes weakened and impaired. Nutrition and function work together. Many people suffer from indigestion because they give their stomachs too little work, and many also suffer from indigestion because the stomach is asked to accomplish more than it is able to perform.

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Massage.—It is far better for the nurse in attendance upon the case **not** to be the masseuse. There are many reasons for this. In the first place the nurse must be selected, having special qualifications for this kind of work ; she must have a will of her own and exercise it with discretion and judgment, and the patient must be caused to feel that the nurse is the machine by which the doctor's mandates are to be unhesitatingly and unflinchingly executed ; firmness and integrity of purpose are most essential attributes. Very much, then, depends upon the

nurse, and no seductive or truckling influences of the patients should for a single moment allow her to neglect her duty. **The physician himself should be the only court of appeal.** I do not agree with taking morning and evening temperatures and noting variations of pulse, taking specific gravities of urine, and so on. Examinations of this kind may be made once, after the weight has been taken, with any other physical observations which may be deemed interesting and useful for clinical record ; but constant note-taking only tends to lead the patient to believe that she must be a centre of lively clinical curiosity and study, a belief which we rather want to avoid than inculcate. The practised eye of the physician will readily discriminate the effects which the treatment is producing, and the masseuse should clearly understand that her work is to massage and nothing else. After a short time the patient will look forward with eagerness

to the appearance of the masseuse ; it is a break to the monotony of the day's proceedings, it is a fresh face which in a measure relieves the weariness of the daily seclusion. Now, with some people, the first effects of massage are to irritate rather than compose and soothe, but in my experience this depends really more upon the masseuse than it does upon the patient. I cannot impress too strongly upon you—though I know I have done this over and over again—that when you first begin to manipulate a patient your movements should be very gentle, and quiet and slow in execution. You must, I am sure, see the necessity for this, for independent of the influence they have upon the sensibility of the patient, the textures will not bear rough handling. Remember you have to deal with wasted, exhausted, feeble, weak and irritable muscles, which, if roughly handled, become still more weak and irritable, and an induced irritability of muscle only leads

to an increased irritability of the patient. You might just as well expect good to result by causing a patient to walk immediately upon rising from a severe illness, as to expect a muscle to respond to severe manipulations when weakened and exhausted from prolonged disuse. Therefore for the first week merely effleurage and petrissage in the quietest manner possible. Do not begin passive movements until after the first week ; it is astonishing how in some cases you can pass suddenly from the passive to the active. Even with this week's gentle manipulation you will invariably find improvement ; the muscles themselves will be firmer, the extremities will be warmer, the skin will have a more healthy feel, there will be less moistness about the hands and feet, and the circulation and temperature of the body generally will have undergone a change. My established rule is never to increase the diet (beyond milk and water, beef juice, very

thin and crisp dry toast, stewed fruit, cream and butter), until my patient is under the full swing of the massage treatment, which is usually at the second week, when the massage should be combined with passive movements of the limbs. The best times are 10 to 11 a.m., and 9 to 10 p.m. You know I particularly advise the lower limbs, the abdomen and the buttocks, for morning massage, and the spine, upper extremities, and head for evening massage. This is my rule, but it has exceptions, and if I do not get the effect I anticipate, I then reverse this order of things and sometimes with advantage; the reason why I cannot tell. The feet and legs to the knee usually require to be manipulated at night as well as in the morning. **Above all things do not expose the body of your patient unnecessarily, and maintain by every possible means the gain in temperature which your manipulations have brought about.**

Experience has taught me a great many things of considerable practical value and importance relative to massage, and the chief of these concerns the dosage. I have been led to conclude that massage may be continued for too long a time without getting a corresponding advantage. It is the rule in these cases that it should be continued for six weeks, and this rule is a good one, with very few exceptions, but we occasionally find that in masséeing paralyzed muscles we induce a gain up to a certain point, and then its good effects begin to wane. I am, therefore, inclined to think that it is best (whenever this becomes apparent), to discontinue manipulating for a fortnight and then begin again. The muscles and the tissues become too much accustomed to its influence, they seem to be weary of it, and wishful for its discontinuance in order that they may pursue their functions by their own unaided efforts. Or, if it be not absolutely discontinued, its admini-

stration should be less frequent, say once, instead of twice a day, and then once every other day. Massage, like everything else, can be overdone, and function is then promoted and sustained by a too artificial means. It should not be discontinued suddenly and entirely; both its commencement and its relinquishment ought to be most carefully regulated.

We consider that a course of massage should be divided into three stages: (1,) A period of gradual increase; (2,) A period of sustained activity; (3,) A period of gradual decline. We say that by the Weir-Mitchell method the third and fourth weeks constitute its period of greatest activity, and at the end of the third week we stimulate the muscles into increased activity by the use of electricity.

* * * * *

Electricity. — We invariably employ Faradization. The induced current may, as suggested by Weir-Mitchell, be applied

with slow interruptions. This may have its advantages, but I am rather doubtful about it. I prefer placing a flat electrode upon the spine, and moving the sponge electrode from one motor point to another. The current must be sufficiently strong to produce good muscular contraction, and independent of this the skin should be stimulated by carrying the sponge quickly over the surface. Of course the current should be weak at first, and certainly not continued sufficiently long to induce fatigue. Half an hour at the utmost once a day is all that is necessary. Dr. Weir-Mitchell attaches great importance to the value of electricity in increasing the temperature of the body, and in his work on "Fat and Blood, and How to Make them," he gives some very interesting tables showing incontestably that this is one of its effects. This, however, has long been known, but in some experiments made by myself many years ago quite confirmatory of these results, I

found that this rise in temperature was remarkably evanescent, and that in ten or fifteen minutes the register was actually less than before the electricity was applied; and I well remember coming to the conclusion which I now hold, that the rise in temperature was due to nervous excitability, and not, as he concludes, to increased tissue change. But this is beside the point for our consideration. There is no doubt, as we have seen, that muscular contractility is attended with increased metabolism, so we may fairly conclude that faradization of the body does aid both circulation and nutrition, which may be sufficient to bring about a rise of temperature; therefore I may be wrong, but the gain by the use of faradization in the treatment of these cases appears to me to be the influence which it exerts upon the intrinsic molecular activity of both nerve and muscle, and also of spinal cord. Be very careful, if you please, in the application of electricity,

never to commence the treatment until the end of the third week, and then do not apply too strong a current, for the injudicious use of electricity may undo all the good which your massage is capable of doing, though its judicious administration is exceedingly useful. I desire, therefore, to put you on your guard. I have proved much by my own experience. There are some of these cases which take electricity wonderfully well and with very marked advantage, but there are others which do not. I have some interesting records of these, but in this respect there are no special signs to guide you until you have by its application put it to the test; therefore, as I have just told you, begin with a mild current, and gradually increase its strength.

I have now to draw your attention to dietary, and one or two other matters of no less importance.

* * * * *

Dietary and Therapeutics.—This is

one of the important parts of the Weir-Mitchell treatment—inasmuch as it requires the utmost care and judgment in its management. I believe thoroughly in the seclusion for appropriate cases, in massage and electricity, but not in over-feeding for every case. I have records of a large number of instances where I have over-fed and well fed, and I really think, upon comparison, the well-fed have ended in the most persistent and most permanent cures. Thorough and complete feeding is, in all cases, absolutely necessary, **but gluttony is not essential.** The requirements of people for food are extremely variable, and what might be well considered over-feeding in one is really ordinary feeding in another. I might tell you, that I have no definite rules for feeding. I can build up better stuff, and more durable and blood-making material, by a diet regulated upon definite lines of requirement according to inherent physical and constitutional

tendencies, than I can by maintaining the stereotyped system of over-feeding. There are three classes of patients which come under our notice for the Weir-Mitchell cure. The first is the thin, emaciated, bed-ridden, helpless and hopeless invalid. The second is the thin, wiry, anxious, exhausted, but acutely lively invalid, who is constantly aiming to do something, but fails to do anything because she becomes wearied and exhausted with any attempt at prolonged effort, and suffers habitually from headaches. The third is the fat, excessively pale invalid, who fails to make blood, whose muscles are flabby, and who is always tired and constantly complaining of weariness and inability to do anything, with sinkings, sighings and yawnings in superabundance.

I have just said that an appropriate dietary for these patients is a very essential element in the curative process. You must know that milk forms an

important part of the dietary during the first week. We are willing to admit that milk is a typical food, and contains all the constituents necessary for maintaining the life and growth of the body. We nevertheless find that in all cases milk cannot be digested; it may be peptonised with zymine or with Benger's alkaline peptic fluid; it may be taken hot or it may be taken cold; it may be taken in large or it may be taken in small quantity—it will not digest; it creates distension, flatulence and constipation, and cannot be tolerated. It is no use forcing patients under these circumstances to take it. But on the other hand, milk will sometimes agree splendidly, and then it forms an excellent part of the dietary. I make it a rule never to force an excessive diet upon a patient if it engenders indigestion and liver derangement. I have proved the fallacy of this over and over again. Well, if we cannot give pure milk, we try milk that

has been skimmed. Weir-Mitchell commences in this way by giving daily about two quarts, well skimmed. It is used as Carel directs, cold or warm, not hot, and the amount given is divided so that the patient takes every two hours enough to make up the full share during the waking day. I prefer whey made hot to either milk or skimmed milk, and to every pint of hot whey I add the juice of a lemon.

I well remember the case of a lady who was under my care, and who when first she went to bed was a living skeleton. For the first week of treatment her dietary in the twenty-four hours consisted only of three quarts of whey and lemon juice, and thin crisp dry toast, with plenty of fresh butter. I then suggested a material alteration in the diet, but she quietly said to me, "Don't you think you had better leave well alone; I feel quite different already; I am sure that I am daily getting stouter and stronger." And upon a

careful examination I certainly found that this was the case. The jelly-like feeling of the muscles had given place to something more tangible, and the nurse, the patient, and the doctor were all agreed that the improvement was so definite that nothing should be altered. By the end of the second week, without any addition to the diet, the improvement was not only maintained but increased. The masseuse and nurse were delighted and surprised, and wanted to know where the gain came from. Every function was acting well ; the sleep had immensely improved, the tongue was clean, the bowels were acting, the temperature of the body was more natural and equable, the pulse was stronger, and the muscles were developing. The patient was wishful now for a change of diet, but I declined to agree to this, and for three weeks she took nothing but three quarts of whey daily with the lemon juice, and a plentiful supply of thin dry toast and any amount of fresh butter.

Now we took a good account of the patient. In the three weeks she had gained eleven pounds in weight, the muscles were firm, with decided tonicity, and during the whole of this time there was no complaint whatever of any form of functional derangement. We still kept to a moderate diet. The first meal, at 7.30, consisted of equal parts immediate tea, milk, dry toast, fresh butter, and the lean of a mutton chop nicely grilled. At 10, half a glass of milk; at 11, massage as usual for one hour; at 12, a claret glassfull of beef juice; at 1.30 p.m., slice of mutton, dry toast, fresh butter, stewed fruit and cream, half a tumbler of **hot** whey; at 4 p.m., half an hour's faradization; at 5 p.m., a cup of tea and bread and butter; at 8 p.m., half a dozen oysters and half a tumbler of stout—this was the daily dietary for another week; still decided improvement. She was now allowed to communicate with her mother by letter only, and to sit up in an arm chair for an hour in the afternoon whilst the

electricity was being administered, and thus, with little variation, passed five weeks of treatment, and no ease ever did or could do better. We had no hitch from first to last ; the patient's condition demanded the treatment which was arranged to adapt itself to the case. For the last, the sixth week of treatment, the patient took three good meals a day with very little farinaeous food stuff. It may seem rather strange that I should object to the hydrocarbons in the form of starch when they are apparently needed, but it is so, and my experience is against them. She took in addition beef juice three times a day, rose at 10 a.m. and went to bed at 7 p.m. Her gain in weight at the end of the sixth week was twenty-three pounds. I always advise my patients to return if possible one month after treatment for two weeks' more massage ; some do not return, others do, and I feel sure that it is to their advantage to do so.

If we analyze this case we shall find

in it several points of interest. The first is that from the beginning to the end the patient was not over-fed ; in fact from the first by the aid of massage oxidation of tissue was promoted, and a rapid but withal a consistent gain in nutrition was secured. Not one single particle of medicine did this patient take—no iron, alcohol, nor coffee, no cod liver oil, malt extract, nor aloes pill, for you see after a few days I had no functional defect to combat. I gradually promoted functional activity, both in voluntary and involuntary organs, and brought it to a standard of well-defined strength before I gave the digestive apparatus any very especial work to perform.

I should like to call your attention to a condition very dissimilar to the foregoing, which we find in the fat bloodless woman. There is gastric pain soon after eating, and also upon pressure over the stomach, and she vomits everything she takes, probably for days or weeks together. These people take apparently little or no food ; still they

keep fat ; but are exceedingly pale, good for nothing, too prostrate to do anything, and they do not care to move. There is frequently great pain just before the menstrual period, and the ovaries are exceedingly hyperæsthetic and irritable. These organs are sometimes removed, rarely with any improvement following in the patient's condition. Such invalids try the different Spas, take large quantities of iron, consult the various specialists, and even take an interest in their practice and the patients constituting their *clientèle*. They are generally even-tempered, kind hearted, and generous in disposition, getting a large mount of sympathy, considering it to be their due. Their age ranges usually from twenty-five to thirty-five.

Fat people, as a rule, are fat because they have relatively less blood. Women with fewer red blood corpuscles are usually fatter than men. The consumption of alcohol favours the conservation of fat in the body ; the alcohol is easily oxidized,

and thus prevents the fat from being burned up. And in addition to the great size and weight of the body, corpulent people suffer from fatigue and breathlessness, and even apoplexy. The recognised rules for the reduction of corpulency are, not to eat too much, arise from the table with an appetite, avoid sugar, bread, potatoes, and alcohol ; drink freely of hot water an hour before each meal, and eat fish and good fresh meat. Tell your cook to throw the frying-pan away, and order fish and flesh, to be taken either grilled, boiled, or roasted.

To treat this class of chronic invalid we have to lessen the fat, and in order to do this we must discontinue any kind of food which increases it ; and we must also do everything to improve the quality of the blood. Therefore my plan is to give the patient three quarts of whey daily, with the juice of four lemons, thin dry toast and butter. Fairly active massage is necessary, and can be well borne from the first. It

may appear strange to you, that I commence to treat these stout patients in the same way that I do lean patients. This is perfectly true, for you must remember what I have told you before about massage, namely, that massage manipulations possess the power to bring tissues into their normal state. If a patient be unduly fat, massage will decrease it ; and if the patient be unnaturally lean, massage will promote the growth of fat. Both in the absence and presence of fat we have a train of symptoms somewhat analogous ; but an anæmic, fat, flabby patient, is more difficult to cure than an emaciated, bloodless patient, for we have seen that good fat and good blood go hand-in-hand, therefore in our flabby, fat patients we have to create a fresh class of fat altogether.

Then what do we do ? We put this jelly-bag-like individual to bed, and for the first fortnight the diet should consist of nothing but whey, lemon juice, and dry toast, or whole meal biseuits ; and as soon as possi-

ble active massage is commenced. The tissues about the loins, buttocks, and thighs are pressed, kneaded, and compressed in every possible way. Now it is astonishing how rapidly this kind of fat melts. In ten days this fat patient will have lost more than ten pounds in weight, and ten pounds loss of fat will cause the patient to look comparatively thin. The kind of dietary should be as follows: 7.30 a.m., 4 ounces of well grilled steak, cup of weak tea drunk as hot as possible, no sugar or milk; the juice of a lemon may be taken with the tea; 10 a.m., glass of beef juice; 11 a.m., massage, particularly of abdomen, buttocks, and thighs; 12 noon, glass of beef juice; 1.30 p.m., two thick grilled mutton cutlets free from fat and bone, dry toast, a glass of good burgundy; 4 p.m., galvanism; 5 p.m., beef juice; 6.30 p.m., beef juice; 7 p.m., boiled sole, dry toast, glass of burgundy; 9 p.m., tumbler of whey with the juice of a lemon; a baked apple without sugar to be taken after each meal.

In these fat anæmic people I always commence treatment with whey and dry toast until a certain reduction in fat has taken place ; I then give a relatively small quantity of fluid ; no milk or soups ; the fluid consisting chiefly of two glasses of good burgundy and sixteen ounces of beef juice in the twenty-four hours. I never give bread, rice, sago, tapioca, or macaroni. Again, in these cases I rarely refuse either fresh or stewed fruit ; and in ordinary cases cream may be taken to the extent of half-a-pound a day.



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